



Gender pay gap in
VET graduates –
a review

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Review

A gender wage gap of 16–18 per cent has persisted in Australia for the past 20 years despite the equal pay decision by the industrial court in 1972. There is a wide body of literature available that looks at the issue of the gender pay gap. This review has focussed on the impact that education and training has had on the gender pay gap. In particular, what impact does vocational education and training (VET) have on this gap?

It has been established that females tend to undertake courses that typically lead to occupations that are relatively low paid (for example hairdressing) relative to men. It is also well understood that Australia has a highly gender segregated workforce and that many female dominated industry sectors are poorly paid compared to male dominated industries.

So, what about VET graduates? The typical occupations of most VET graduates (Certificate III and above) sits between the low-skilled (low-paid) and high-paid professionals. However, some occupations require high-level VET qualifications (Certificate IV) but are low-paid- for example most caring occupations require Certificate IV's- are low paid and are over-represented by women. The number of studies that directly investigate the gender wage gap of VET graduates is small, but, there are a number of studies that indirectly compare male and female wages.

Karmel & Liu (2011) using the 1995 cohort of the Longitudinal Surveys of Australian Youth (LSAY) showed that males and females have quite similar pathways into post-school education and employment. There is one exception; that males are twice as likely as females to undertake a traditional apprenticeship. Further, females are more likely to undertake university study (43 vs 36 per cent). Regardless of the post-school study pathway, male and female young people are equally likely to have no post-school study (~30 per cent). As part of their study, Karmel & Liu (2011) investigated the weekly wages of the post-school pathways for males and females. They show that females do substantially worse, within each pathway. However, Karmel & Liu (2011) also showed that the best pathways differ between males and females, the best pathways for young females is completing senior secondary school and undertaking higher education. Young males on the other hand have good outcomes from alternative pathways, particularly through the completion of a traditional apprenticeship. The results from their analysis are reproduced in table 1.

Table 1: Gross weekly wages (\$) for males and females by academic orientation and post-school pathway

Pathway	Low academic orientation		High academic orientation	
	Males	Females	Males	Females
ESL ¹ , no post-school study	907	776	889	798
ESL, apprentice	934	NA	916	NA
ESL, Trainee/other VET	944	NA	750	NA
ESL, further post-school study		704		889
Completed Year 12, no post-school study	880	707	963	887
Completed Year 12, apprentice	1033		1153	
Complete Year 12, trainee	863		907	
Completed Year 12, apprentice/trainee		683		914
Completed Year 12, other VET	854	721	944	805
Completed Year 12, university study	934	832	1002	989

¹ESL = Early school leaver

Ryan (2002) and Sherman (2006) both found that VET qualifications provided better wage outcomes for males relative to females. Ryan (2002) established that male and female wage outcomes increased as the time from training increased. Table 2 (sourced from Sherman, 2006; table 7) shows that the wage gap for young people who completed TAFE training in 2001 was larger 3 years out from completion than 1 year after for the 20 to 24-year-olds.

Table 2: Average annual income of students employed full-time, aged 15 to 24, who completed TAFE training in 2001, at 2002 and 2004

Age Group	2002 (\$)	F/M wage ratio (2002)	2004 (\$)	F/M wage ratio (2006)
15 to 24 years	27 577	-	36 479	-
Male	28 606		39 496	
Female	25 633	0.8961	31 820	0.8057
15 to 19 years	21 495		31 082	
Male	22 375		32 314	
Female	20 189	0.902	29 761	0.921
20 to 24 years	30 410		40 500	
Male	31 155		43 600	
Female	28 824	0.925	34 091	0.782

Annual income data reproduced from Sherman (2006), table 7, page 19.

Table 2, which presents the average annual income of full-time employed graduates by field of education, shows that females earn at most 92 per cent of male wages. In the worst case (20 to 24 years in 2004), females earn 78 per cent of males

Tables 3 and 4 have been extracted from the 2011 Student Outcomes Survey (National Centre for Vocational Education Research, 2010) to provide some further information on the impact of VET qualifications on the gender wage gap.

Table 3 presents the reported average annual income for full-time employed VET graduates in 2011 by fields of education and gender. From this, it is clear that there are substantial differences between males and females even within the same fields of education. Generally, females earn less than males (up to 74 per cent) with the exception being females employed after they have completed VET studies in Information Technology. Table 4 repeats the exercise but now considers average annual income by industry of employment. In this case we observed that for all industries, female VET graduates earn less than their male counterparts (up to 73 per cent in other services). We note that tables 3 and 4 apply for all VET graduates, and any previous educational experience has been ignored, as has the level of qualification undertaken.

Table 3: Average annual income of VET graduates employed full time by field of education for males and females, 2011

Field of Education	Male	Female	F/M ratio (%)
	Average annual income (\$)	Average annual income (\$)	
01 Natural and Physical Sciences	61300	46800	76
02 Information Technology	47800	52100	109
03 Engineering And Related Technologies	58100	49300	85
04 Architecture And Building	50900	48500	95
05 Agriculture, Environmental And Related Studies	52900	48500	92
06 Health	67800	50500	74
07 Education	73400	66100	90
08 Management And Commerce	59500	47800	80
09 Society And Culture	54000	44500	82
10 Creative Arts	43200	40600	94
11 Food, Hospitality And Personal Services	44500	37300	84
12 Mixed Field Programmes	47800	44700	94

Source: 2011 Student Outcomes Survey, NCVET (2011)

Table 4: Average annual income of VET graduates employed full time by industry for males and females, 2011

Industry	Male	Female	F/M ratio (%)
	Average annual income (\$)	Average annual income (\$)	
Agriculture, Forestry and Fishing	51400	45600	89
Mining	88000	67600	77
Manufacturing	53800	43700	81
Electricity, Gas, Water and Waste Services	67900	59000	87
Construction	53400	50900	95
Wholesale Trade	51200	44100	86
Retail Trade	43800	37700	86
Accommodation and Food Services	43100	38000	88
Transport, Postal and Warehousing	62100	49400	80
Information Media and Telecommunications	56000	46500	83
Financial and Insurance Services	62000	50200	81
Rental, Hiring and Real Estate Services	51200	41200	80
Administrative and Support Services	60500	46100	76
Professional, Scientific and Technical Services	48800	43000	88
Public Administration and Safety	65600	60000	91
Education and Training	66100	60400	91
Health Care and Social Assistance	53900	46700	87
Arts and Recreation Services	50900	47200	93
Other Services	45900	33300	73

Source: 2011 Student Outcomes Survey, NCVET (2011)

Fitzenberger & Kunze (2005), Ryan (2002), Watson (2011) and Herault et al. (2011) all show that VET qualifications do attract a wage premium, on average, for all graduates. The wage premium is however lower for females with Ryan (2002) reporting a 5 per cent lower wage premium. All authors show that the

gap in wage premiums increase both with time since qualification and qualification level. Watson (2011) also shows that females are penalised more for lower level qualifications than males with qualifications at the same level. Herault, Zakirova & Buddelmeyer (2011) also found that there are wage penalties for female trainee and apprentices who complete some Certificate II and IV level qualifications. This result is consistent with the findings of Karmel & Mlotkowski (2010) who find that completion of some traineeships lead to wage penalties. A similar result is seen among university graduates who subsequently complete a VET qualification (Karmel & Nguyen 2006).

Lim & Karmel (2011) when investigating the vocational equivalence to Year 12 compared the gross weekly wages of fulltime workers of early school leavers by various VET qualification levels (qualification obtained by age 19). The results from their paper are presented in table 5. It is clear that female early school leavers fare much worse than males in terms of pay regardless of the certificate level undertaken. Females who undertake an apprenticeship earn nearly half the weekly salary of males. Again, the impact of the field of study will require further investigation.

Table 5: Gross weekly wage by gender for early school leavers, LSAY Y95/Y98

Qualification level	Gross weekly wage – males	Gross weekly wage - females	F/M Pay ratio
Completed Year 12 and TER in bottom half	945	783	0.829
Year 11 or below and apprenticeship completed	1317	744	0.565
Year 11 or below and Certificate II completed	906	760	0.839
Year 11 or below and Certificate III completed	1063	703	0.667
Year 11 or below and Certificate IV or higher completed	868	756	0.871
Year 11 or below and other certificates completed	1045	814	0.779
Year 11 or below and no further training completed	981	717	0.731
Year 11 or below and traineeship completed	916	733	0.800

Lee (2010) investigated the change over time in occupational prestige. Occupational prestige is a measure of occupations on a scale of 0–100 that incorporates various inputs to assign occupations to a position on the scale. Lee (2010) investigated gender by qualification interaction and found that females tended to have higher occupational prestige, and this became more pronounced for young people without Year 12. Lee’s results suggested that females work in more prestigious occupations but earn less than their male counterparts. In terms of completing a VET qualification, the increase in occupational prestige was greater for males than females suggesting that males benefitted more the females from VET qualifications.

Tables 6 and 7 present some simple tables from the 2003 cohort of the Longitudinal Surveys of Australian Youth (National Centre for Vocational Education Research, 2011). We begin by analysing the gross weekly wage at age 22 disaggregated by highest education level obtained (table 6). From table 6, we see that for all qualification levels, with the exception of postgraduate degrees (noting that this is a small sample size) females earn substantially less than their male counterparts. Females whose highest qualification is a Certificate I earn nearly half the wage of males with the same qualification.

Table 6: Average weekly wage for those working full-time at age 22 by gender disaggregated by highest education level obtained by age 22

Highest Education Level Obtained	Male	Female	F/M ratio (%)
	Average gross weekly wage	Average gross weekly wage	
1 Certificate I	1211.46	704.03	58
2 Certificate II	937.49	775.41	83
3 Certificate III	1145.65	774.35	68
4 Certificate IV	992.55	785.47	79
5 Certificate - level unknown	1240.52	808.71	65
6 Advanced diploma/diploma (incl. associate degree)	899.22	838.57	93
7 Bachelor degree	1055.31	940.28	89
8 Graduate diploma/graduate certificate	1112.00	1001.96	90
9 Postgraduate degree (PhD/Masters)	914.28	1002.61	110
10 Did not complete a qualification	959.67	806.04	84

Source: Longitudinal surveys of Australian Youth (LSAY), Y03 cohort

Table 7: Average weekly wage for those working full-time at age 22 by gender disaggregated by Industry, where the highest qualification is a VET qualification

Industry of employment (ANZSIC 1993)	Average gross weekly wage (\$) - Males	Average gross weekly wage (\$) - Females	F/M ratio (%)
A AGRICULTURE, FORESTRY AND FISHING	943.97	853.60	90
B MINING	2056.75	1611.82	78
C MANUFACTURING	959.47	871.72	91
D ELECTRICITY, GAS and WATER Supply	1240.86	940.49	76
E CONSTRUCTION	1176.73	776.56	66
F WHOLESALE TRADE	854.24	805.43	94
G RETAIL TRADE	838.34	750.72	90
H ACCOMMODATION AND FOOD SERVICES	781.22	750.32	96
I TRANSPORT and STORAGE	1055.47	800.24	76
J COMMUNICATION SERVICES	916.02	709.63	77
K FINANCE AND INSURANCE	998.51	887.75	89
L PROPERTY AND BUSINESS SERVICES	994.40	809.43	81
M GOVERNMENT ADMINISTRATION AND DEFENCE	1006.85	958.40	95
N EDUCATION	817.69	676.34	83
O HEALTH AND COMMUNITY SERVICES	923.82	784.29	85
P CULTURAL AND RECREATIONAL SERVICES	983.04	720.04	73
Q PERSONAL AND OTHER SERVICES	1021.06	838.53	82

Source: Longitudinal surveys of Australian Youth (LSAY), Y03 cohort

Table 7 presents the gross weekly wages of males and females by highest VET qualification obtained by industry of employment for full-time employees at age 22. From this we can see that for all industries females earn less than their male counterparts, with accommodation and food services, wholesale trade and government administration and defence being the most equal. Accommodation and food services is also the lowest paid industry and is highly regulated by awards. The industries that have the greatest discrepancies are construction, cultural and recreational services, transport and storage and electricity, gas and water supply.

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